

WHAT IS CLAIMED IS:

1. A multi-home agent control apparatus, which manages a plurality of home agents, the multi-home agent control apparatus comprising:

a packet observing unit, which observes a packet input to or output from a home link;

a home agent list storage unit, which creates a home agent list using home address information included in a binding update (BU) message and stores the home agent list if the packet observing unit receives the BU message and a binding acknowledgement (BACK) message; and

a preference value calculation unit, which calculates a preference value of each of the home agents using the home agent list.

2. The multi-home agent control apparatus of claim 1, wherein the packet observing unit comprises:

an inbound packet observing unit, which reads a packet transmitted to the home link from an external link, and transfers home address information included in the packet to a temporary memory if the packet is a BU message; and

an outbound packet observing unit, which reads a packet transmitted to an external link from the home link, and copies the home address information stored in the temporary memory to a main memory if the packet is a BACK message that contains information indicating that binding has been accepted.

3. The multi-home agent control apparatus of claim 1, wherein the preference value calculation unit calculates the preference value of each of the home agents by calculating the number of mobile nodes bound to each of the home agents.

4. The multi-home agent control apparatus of claim 1, wherein the preference value calculation unit calculates the preference value of each of the home agents by respectively multiplying a performance weight of each of the home agents by the number of mobile nodes bound to each of the home agents.

5. The multi-home agent control apparatus of claim 1, wherein the home address information comprises a first home address, which is recorded in a home address option field of a received packet, a second home address, which is a destination address of an IPv6 header included in the received packet, a care-of-address (CoA), and lifetime information.

6. The multi-home agent control apparatus of claim 1, wherein the home agent list storage unit comprises a temporary memory and a main memory, and wherein the home list information stored in the temporary memory is deleted if a BACK message has not been received for more than a predetermined amount of time, and the home list information stored in the temporary memory is copied to the main memory if a BACK message has been received.

7. A multi-home agent control method, which is used to manage a plurality of home agents, the multi-home agent control method comprising:

(a) observing a packet input to or output from a home link;

(b) creating a home agent list using home address information included in a binding update (BU) message and storing the home agent list if the BU message and a binding acknowledgement (BACK) message are received in (a); and

(c) calculating a preference value of each of the home agents using the home agent list.

8. The multi-home agent control method of claim 7, wherein in (c), the preference value of each of the home agents is calculated by counting the number of mobile nodes bound to each of the home agents.

9. The multi-home agent control method of claim 6, wherein in (c), the preference value of each of the home agents is calculated by respectively multiplying a performance weight of each of the home agents by the number of mobile nodes bound to each of the home agents.

10. The multi-home agent control method of claim 7, wherein the home address information comprises a first home address, which is recorded in a home address option field of a received packet, a second home address,

which is a destination address of an IPv6 header included in the received packet, a care-of-address (CoA), and lifetime information.

11. A multi-home agent control method, which is used to manage a plurality of home agents, the multi-home agent control method comprising:

(a) reading a packet transmitted to a home link from an external link;

(b) storing home address information, which includes a home address recorded in a home address option field of the packet read in (a), a destination address of an IPv6 header of the packet, a care-of-address (CoA) and lifetime information, in temporary memory if the packet is a BU message;

(d) reading a packet transmitted to an external link from the home link and determining whether the packet is a binding acknowledgement (BACK) message;

(e) creating a home agent list if the packet read in (d) is a BACK message;

(f) calculating a preference value of each of the home agents using the home agent list; and

(g) updating the home agent list at a predetermined frequency.

12. The multi-home agent control method of claim 11, wherein (b) comprises:

(b1) determining whether a mobility header is contained in a next header field of the IPv6 packet of the packet read in (a) and whether the mobility header indicates that the packet is a BU message; and

(b2) determining whether a home registration field of the BU message is set to 1 and whether the home registration field includes a home address option.

13. The multi-home agent control method of claim 11, wherein in (d), the packet is determined to be a BACK message if a status field of the packet has a value of 0.

14. The multi-home agent control method of claim 11, wherein in (f), the preference value of each of the home agents is calculated by calculating the number of mobile nodes bound to each of the home agents.

15. The multi-home agent control method of claim 11, wherein in (f), the preference value of each home agent is calculated by respectively multiplying performance weight of each of the home agents by the number of mobile nodes bound to each of the home agents.

16. The multi-home agent control method of claim 11, wherein the home address information comprises a first home address, which is recorded in a home address option field of a received packet, a second home address,

which is a destination address of an IPv6 header included in the received packet, a care-of-address (CoA), and lifetime information.

17. A computer-readable recording medium on which a program that is used to manage a plurality of home agents, is recorded, the program including instructions, which when executed comprise:

(a) observing a packet input to or output from a home link;

(b) creating a home agent list using home address information included in a binding update (BU) message and storing the home agent list if the BU message and a binding acknowledgement (BACK) message are received in (a); and

(c) calculating a preference value of each of the home agents using the home agent list.